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Bibliometric Studies and Global Slum Settlements Research Potential During 2013-2022

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Abstract

This study aims to overview the global slum settlements research potential through bibliometric analysis. The data source was taken from the Scopus database during 2013 -2022, using the keywords slum and settlements, which resulted in 958 English journal articles. The dataset is imported into Mendeley software as a RIS file (.ris) for further analysis and visualization using VOSviewer 1.6.15. The research findings in the bibliometric analysis are 8 clusters in the study of slums. Fields of study that are still relatively underdeveloped, such as adaptive capacity, vulnerability, risk factors, slum settlements, informal urban settlements, tenure security, urban renewal, property rights, politics, community, global health, environmental health, social determinants of health, urban health and quality of life. Therefore, future researchers need to expand their research in this field.*

Keywords: *bibliometric, slum, settlements, scopus, cluster*

Introduction

Cities in developing countries are urbanizing rapidly. The rate of urban population growth is often beyond the ability of governments to provide adequate housing and services to urban populations. According to the United Nations report, one out of every three urban dwellers lives in inadequate housing with little or no essential services (Report, 2010). Slum settlements in developing countries generally share several characteristics, such as unclear land tenure, poor quality and size of the construction, poor access to services and violations of land use zoning, a crime that thrives in dense areas and unequal employment opportunities. Adequate (Adane, Mengistie, Kloos, Medhin, & Mulat, 2017; Doe, Peprah, & Chidziwisano, 2020; Sarkar & Bardhan, 2020). With this in mind and a sharper focus on slums as a manifestation of urban poverty in urbanization, more attention and research is being paid to this field of study. To increase understanding and knowledge, it is necessary to have accurate information related to research trends that occur with research mapping so that topics of discussion that are already saturated in research are consistent. Several research themes on slums have been carried out, including planning and policies for dealing with slums (Bertelli, 2021; Jones, 2017; Liu & Zhang, 2020; Yeboah, Asibey, & Abdulai, 2021). The role and involvement of the community/community in the settlement of slum settlements (Archer, 2012); Li et al., 2021; (Adama, 2020; Zuhdi, 2022). Residents' perceptions of slum settlements (Celhay & Gil, 2020); Doe et al., 2020). The role of social capital in slum communities (Malik, Roosli, & Tariq, 2020; Obaitor, Lawanson, Stellmes, & Lakes, 2021; Surya, Saleh, et al., 2020; Surya, Syafri, et al., 2020).

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The role of social capital in slum communities (Malik et al., 2020; Obaitor et al., 2021; Surya, Saleh, et al., 2020; Surya, Syafri, et al., 2020). Mapping slum areas through surveys (Wurm, Taubenböck, Weigand, & Schmitt, 2017);(Roy, Bernal, & Lees, 2020);(Thomson et al., 2020).

Research on spatial patterns and land use (Surya, Syafri, et al., 2020). Economic, political and social globalization influence the prevalence of slum settlements in developing countries (Woo & Jun, 2020). Research on slum governance (Rahman & Ley, 2020) and many others.

Bibliometrics is often used to map research developments in various disciplines, such as bibliometric analysis for sustainable development purposes (Du, Xu, Li, Liu, & Chu, 2021; Mishra et al., 2023), a bibliometric analysis of people's housing satisfaction (Biswas, Sultana, Priovashini, Ahsan, & Mallick, 2021), a bibliometric analysis of slums (Kahraman, 2022), a bibliometric analysis of innovative city governance in Asia (Sulistyaningsih, Loilatu, & Roziqin, 2023), a bibliometric analysis of implementing affordable and sustainable innovative housing (Moghayedi et al., 2021), analysis bibliometrics for the evolution of urban expansion (Xie, Zhang, & Duan, 2020), bibliometric analysis for mapping the main features and dimensions of inclusive cities (Liang, De Jong, Schraven, & Wang, 2022).

Although many bibliometric studies on slum settlements have been carried out, we have yet to find a mapping of the development of slum research through bibliometric analysis. We are filling this knowledge gap to provide an overview of the research potential of existing slums. This strengthens the background for conducting this mapping as an initial identification for researchers interested in this topic to be able to see trends, topics, and methods often used (Kiefer & Ranganathan, 2020; Li, Alakshendra, & Smith, 2023).

A bibliometric study measured research progress (Saputra et al., 2023). Bibliometric analysis was used to map slum settlement research from 2013-2022. Therefore, this mapping is expected to help researchers who are interested in studying slums to find out what topics have been researched and which have not been researched, as well as topics that are being explored or are already saturated in research (Ubillus, Neira-Montoya, Sedano-Gelvet, & Verona-Cueva, 2022).

This research aims to provide an overview of the potential for global slum settlement research on the Scopus database written by researchers from around the world over the last 10 years through bibliometric analysis. The results of this study can be used as input and insight for researchers interested in studying slums (Pitts, 2022).

Methods

This study used a bibliometric study involving the Scopus database for 2013-2022, accessed on 15 June 2023. The query data used were TITLE-ABS-KEY (slum AND settlements) AND PUBYEAR > 2012 AND PUBYEAR < 2023 AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, ";")).

Based on the search results of the Scopus database with the keywords slum and settlements, publication year restrictions 2013- 2022, article document type, journal source type, final publication stage and limited to English only, approximately 958 articles were obtained relevant to the research topic.

The dataset is imported into Mendeley software in the form of a RIS file (*.ris) for further analysis

Results

Number of articles “Slum Settlements” published in 2013 – 2022

Based on search results for journal articles from the Scopus database with the keywords slum and settlements for the last 10 years (2013-2022) and limited to the type of final journal articles in English, a total of 958 articles were found. There is an increasing publication of slum settlement articles every year, and most publications occurred in 2020, with 145 articles (see Figure 1).

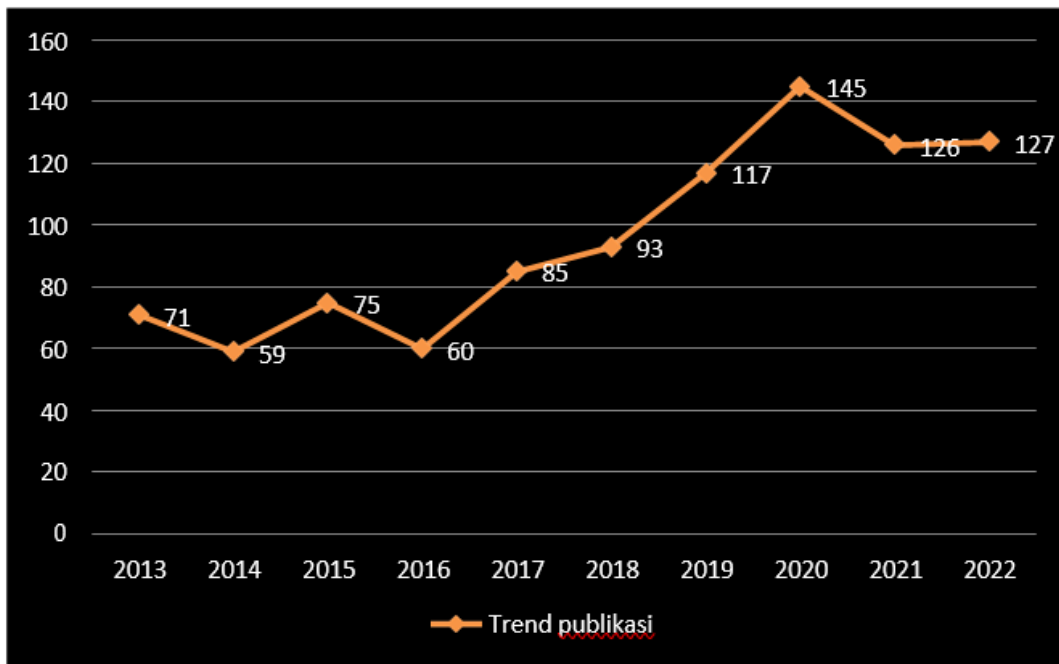


Figure 1 The trend in the number of slum settlement articles published in 2013-2022 (source: processed by the author)

Contribution of authors, journals, fields of study and countries to the article "Slum Settlements" in 2013-2022

Based on the productivity of the top 10 authors, journals, fields of study and countries in slum settlements research during 2013-2022 in the Scopus database (see Table 1). Kyobutungi, C is the first ranked author with 15 articles, followed by Kuffer (13), Taubenböck, H (12), (Wurm et al., 2017), Kabiru, C.W (10), Pfeffer, K (10), Ko, A.I (9), Reis, M.G (9), Sliuzas, R (9) and Costa, F (8). Habitat International journal is ranked first in the top 10 journals with 37 publications, and Cities and Journal of Water Sanitation and Hygiene for Development are in the top 10 journal positions. Social Sciences is ranked first in the field of study studies with 616 publications. The percentage of publications in the field of study shows that slum settlement research is mainly discussed in social sciences at 37.3%, followed by environmental science studies at 17.0% (see Figure 2). Furthermore, the United States ranked first in terms of publication of slum settlements articles with 200 articles, followed by the United Kingdom with 158 publications, and Brazil with 42 publications, ranked in the top 10 countries for publication

of slum settlements articles.

Table 1. Top 10 rankings of authors, journals and countries in slum settlements research 2013-2022 (source: processed by the author).

Author	Number of articles	Journal	of publications	Field of study	of publications	Country	of publications
Kyobutungi, C.	15	Habitat International	37	Social Sciences	616	United States	200
Kuffer, M.	13	Cities	29	Environmental Science	280	United Kingdom	158
ubenböck, H	12	Environment And Urbanization	22	Medicine	205	Kenya	124
Wurm, M et al	11	International Journal of Environmental Research And Public Health	21	Engineering	89	India	111
Kabiru, C.W	10	Plos One	19	Earth and Planetary Sciences	80	South Africa	78
Pfeffer, K.	10	Sustainability Switzerland	16	Arts and Humanities	69	Netherlands	63
Ko, A.I.	9	International Journal Of Urban And Regional Research	13	Business, Management and Accounting	55	Australia	58
Reis, M.G.	9	World Development	13	Economics, Econometrics and Finance	45	Indonesia	51
Sliuzas, R.	9	International Journal of Urban Sustainable Development	12	Agricultural and Biological Sciences	41	Germany	50
Costa, F.	8	Journal of Water Sanitation and Hygiene For Development	12	Energy	37	Brazil	42

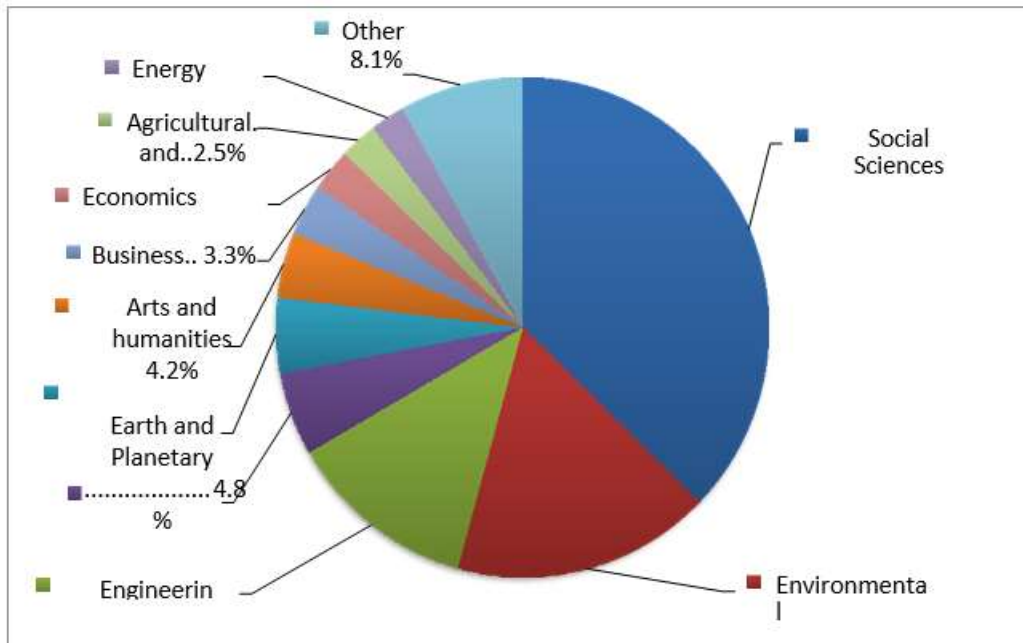


Figure 2 Percentage of documents by field of study (source: processed by the author)

Mapping the trend of research publication "Slums Settlements" during 2013-2022

VOSviewer provides three visualizations of the map in the form of network visualization, overlay visualization, and density visualization (Waltman, 2020). Based on the results of VOSviewer processing in the network visualization analysis, there are 72 items and 8 clusters (see Figure 3). Cluster-based grouping finds relationships between keywords in research articles (Farida, 2020).

Clusters here are represented by colour; for example, cluster 1 in red (14 items), study domain in the field of community participation, developing countries, housing policy, informal settlements, resettlement, slum redevelopment, slum settlement, slum upgrading, sustainability, sustainability development, urban development, urban planning, urban regeneration, urban resilience Green Cluster 2 (12 items), study domain in the fields of cities, citizenship, community, conflict, development, eviction, housing, inequality, participation, policy, politics, urban (Deniz, Ergüden, & Çiftçi, 2022).

Cluster 3 blue colour (11 items), study domain on environmental health, global health, infrastructure, poverty, sanitation, upgrading, urban health, urbanization, social determinants of health, violence, and water. Cluster 4 in yellow (11 items) studies domains on adaptation, adaptive capacity, climate change, incremental housing, migrants, public health, resilience, risk, slum dwellers, urban poor, and vulnerability. Five purple clusters (9 items) study domains on food insecurity, mental health, quality of life, risk factors, slum settlements, sub-Saharan Africa, informal urban settlements, and urban slums (Rojas, Paredes, Banerjee, Akman, & Mubayi, 2022). A cluster of 6 colours of turquoise (8 items), study domain on the global south, informality, property rights, south Asia, tenure security, urban poverty, urban remote sensing, and urban renewal. A cluster of 7 colours, orange (5 items), study domain on disaster, informal settlement, migration, slum, South Africa. Cluster 8 brown colour (2 items) study domain on the right to the city, urban informality (Patel & Deheri, 2022).

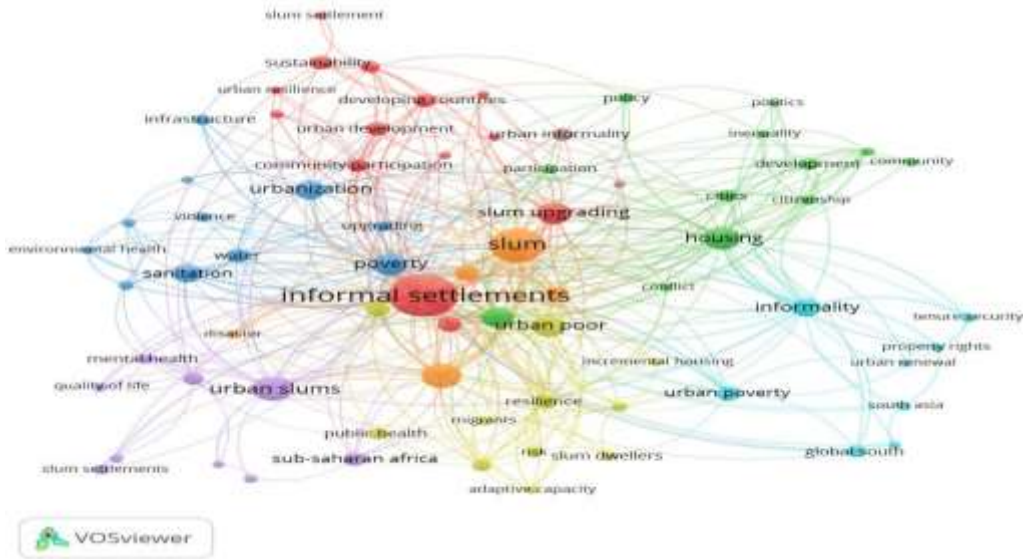


Figure 3. Network Visualization (source: processed by the author)

To see the novelty of slum settlement research, you can see the overlay visualization (see Figure 4). The brighter the colour (yellow), the more recent the research. Conversely, the darker the colour displayed, the longer the research and the older the year of study. For example, research on slum settlements, public health, slum dwellers, disaster, food insecurity, risk factors, community, environmental health, and relative inequality is still being carried out. In contrast, research on upgrading, poverty, housing, resettlement, participation, policy, citizenship, adaptation, informality, conflict, and tenure security is an old study. This analysis found that empirical studies were to obtain the latest research, which had not been carried out by many previous researchers regarding slums.

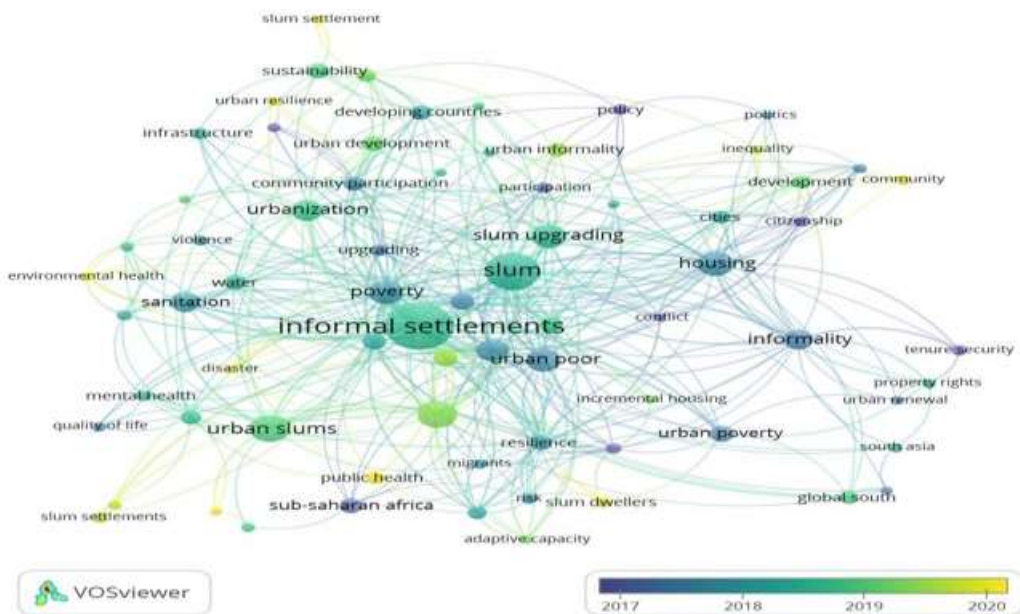


Figure 4. Overlay Visualization (source: processed by the author).

The processed density visualization results in VOS viewer describe the colour points of each keyword in the article based on the density of the number of items associated with other items (see Figure 5). In Figure 5, it can be seen that the more precise the yellow colour produced, the more discussion on that topic. On the other hand, darker topics indicate that research is still relatively rare.

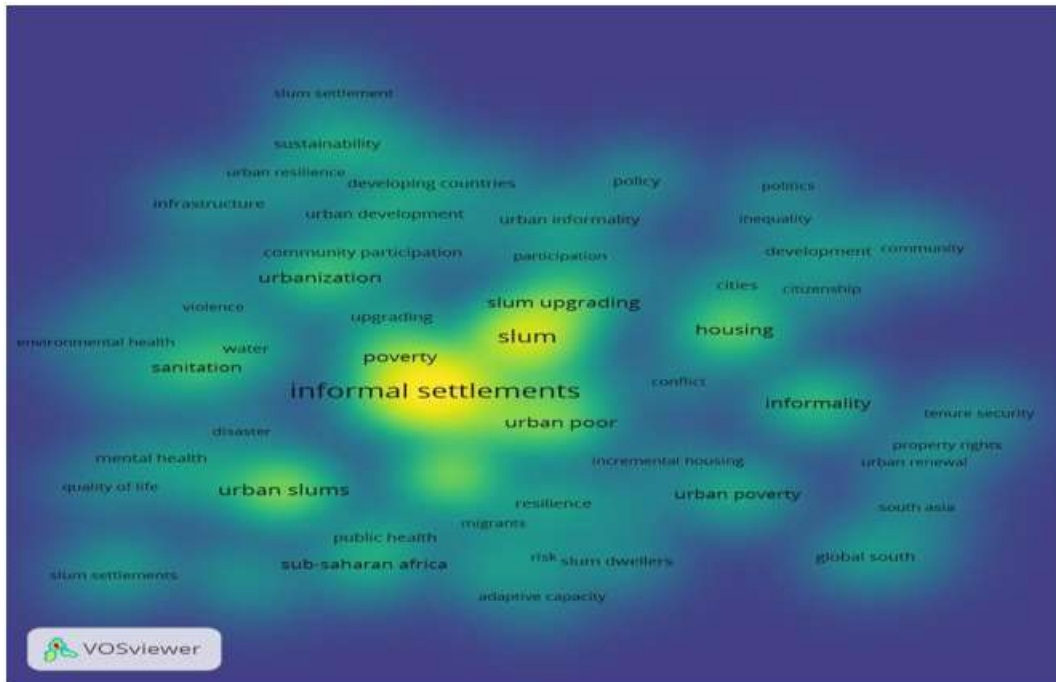


Figure 5. Density Visualization (source: processed by the author)

Discussion

VOS viewer is software that can visualize bibliometric networks such as authors, journals, fields of study, and countries. With mapping tools, you can get an overview and various information on the development of the field of science and the results of research that has been done before so that it can be used as a basis for building novelty research. The mapping becomes a reference for researchers to find out trends or research trends that are currently happening. Based on an analysis of the productivity of writers, journals, fields of study and countries that research slum settlements taken from the Scopus database for the last 10 years through keywords, 958 articles were obtained, where Kyobutungi, C is the most productive writer worldwide with 15 articles. Habitat International is the most prolific journal, with 37 publications. Social Sciences is a frequently conducted field of study with 616 articles, and the United States is the country with the most research on slums, with 200 publications. If you look at the trend of slum settlement publications based on VOS viewer processing on network visualization analysis, 7 clusters distinguish the fields of study from each cluster. From this network visualization analysis, we can also map research on slum settlements which is relatively under-done, especially when it comes to adaptive capacity, vulnerability. Risk factors, slum settlements, informal urban settlements, tenure security, urban renewal, property rights, politics, community, global health, environmental health, social determinants of health, urban health and quality of life.

This study has limitations because it only takes journal articles, excludes conference proceedings, books and book series from the Scopus database, and does not use other data sources, such as Web of Science, crossref, or google scholar. Therefore, we hope that futureslum settlements bibliometric research can further explore this topic to develop more in terms of the use of documents, databases, co-authorship, author affiliation and analysis to provide even better insights into slum settlements research.

Conclusions

This research aims to provide an overview of the global slum settlements research potential through bibliometric analysis. During the last 10 years (2013-2022), there were 958 journal articles indexed by Scopus. There are 8 study field clusters related to the slums studied. The field of research on slum settlements that is relatively under-researched by researchers is mainly related to adaptive capacity, vulnerability, risk factors, slum settlements, informal urban settlements, tenure security, politics, community, global health, environmental health, social determinants of health, urban health and quality of life. Thus, future research on slums can expand their research into this field.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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